

WHAT IS CLAIMED IS:

1. A magnetic resonance imaging coil system for forming images of regions of interest, comprising:

5 a first phased array coil element formed of a plurality of electrically conductive members and defining a first array volume;

a second phased array coil element formed of a second plurality of electrically conductive members and defining a second array volume, said second phased array coil element disposed at least partially within said first array volume;

10 at least one of said first and second phased array coil elements being adapted to apply a first magnetic field to at least one of said first and second array volumes;

an apparatus for applying energy to the coil system such that the first magnetic field is substantially uniform; and

15 at least one of said first and second phased array coil elements being further adapted to receive a second magnetic field generated by a subject in response to said first magnetic field.

2. The system of claim 1 wherein the apparatus for applying energy comprises a data acquisition system.